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(54) **MATERIAL COLLECTION APPARATUS**

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A45C 3/00	(2006.01)
A45C 7/00	(2006.01)
A45C 13/00	(2006.01)
A45C 11/00	(2006.01)

(52) **U.S. Cl.**

CPC ***B65D 29/00*** (2013.01); ***A45C 3/001*** (2013.01); ***A45C 7/0077*** (2013.01); ***A45C 13/008*** (2013.01); *A45C 11/00* (2013.01); *A45C 2007/0013* (2013.01)

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CPC A01G 1/12; A01G 9/04; B65D 75/14; B65F 1/00; Y10T 428/24005

USPC 383/4, 6, 7, 36; 141/331, 337; 280/18–20; 294/137, 140–142, 149, 294/150, 152; 5/625, 627, 628

See application file for complete search history.

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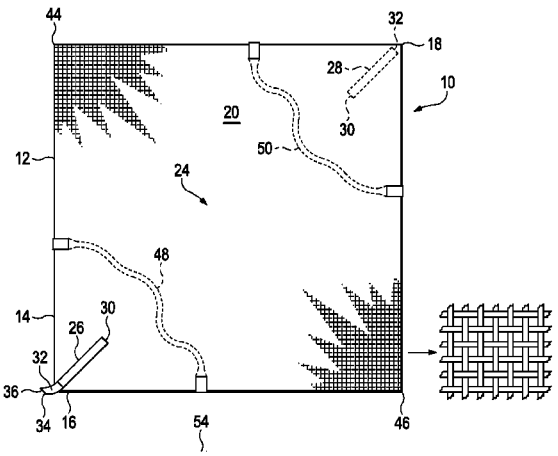
(57) **ABSTRACT**

An apparatus for collecting material is provided. The apparatus may include a flexible support structure having a first surface and a second surface, the first surface including a material collection area. The apparatus may further include a closure system including a first fastener member disposed on the first surface and a second fastener member disposed on the second surface. At least a portion of the closure system may be spaced from a peripheral edge of the support structure and/or may be configured to releaseably join the first surface and the second surface together. The support structure may include an open configuration and a rolled configuration, wherein in the rolled configuration the closure system may releaseably join the first surface and the second surface together and/or funnel shapes may be formed on either side of the material collection area.

2 Claims, 2 Drawing Sheets



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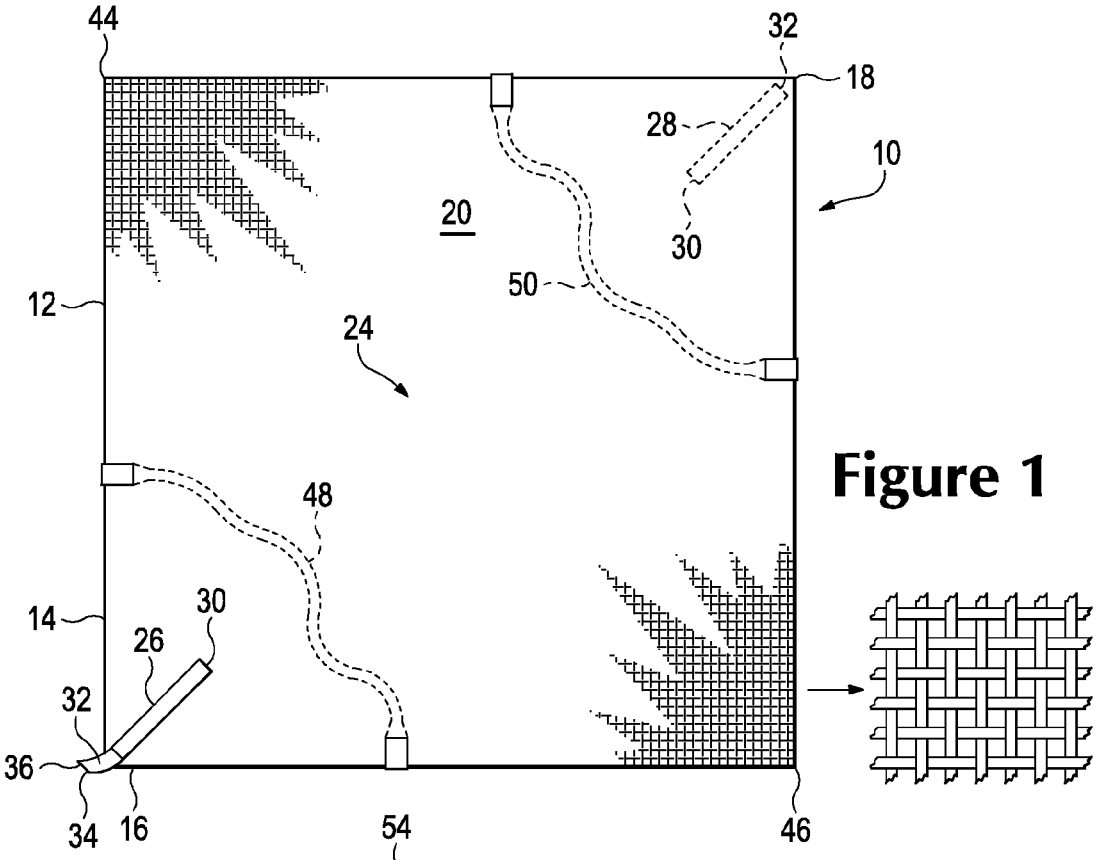

Figure 1

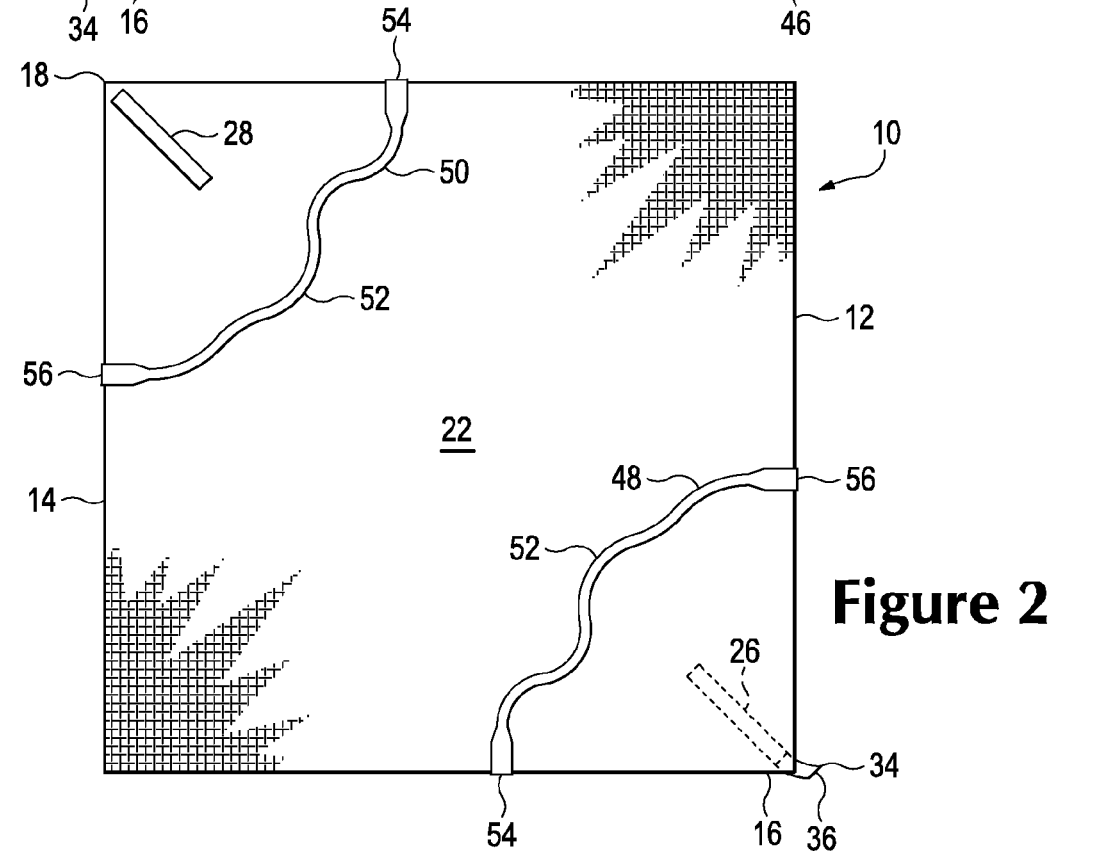

Figure 2

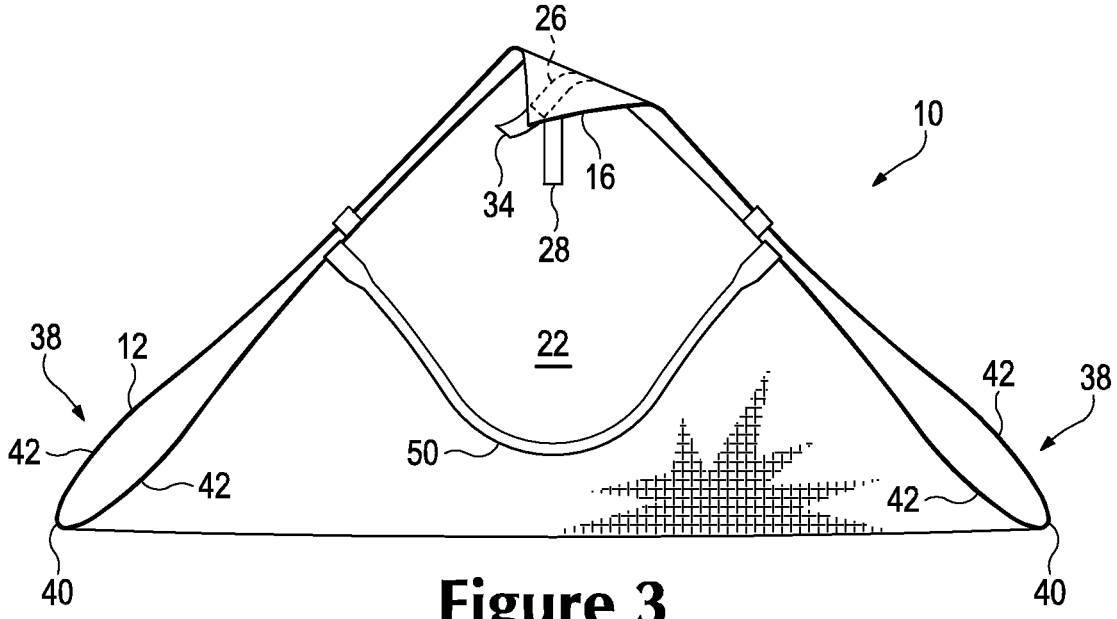

Figure 3

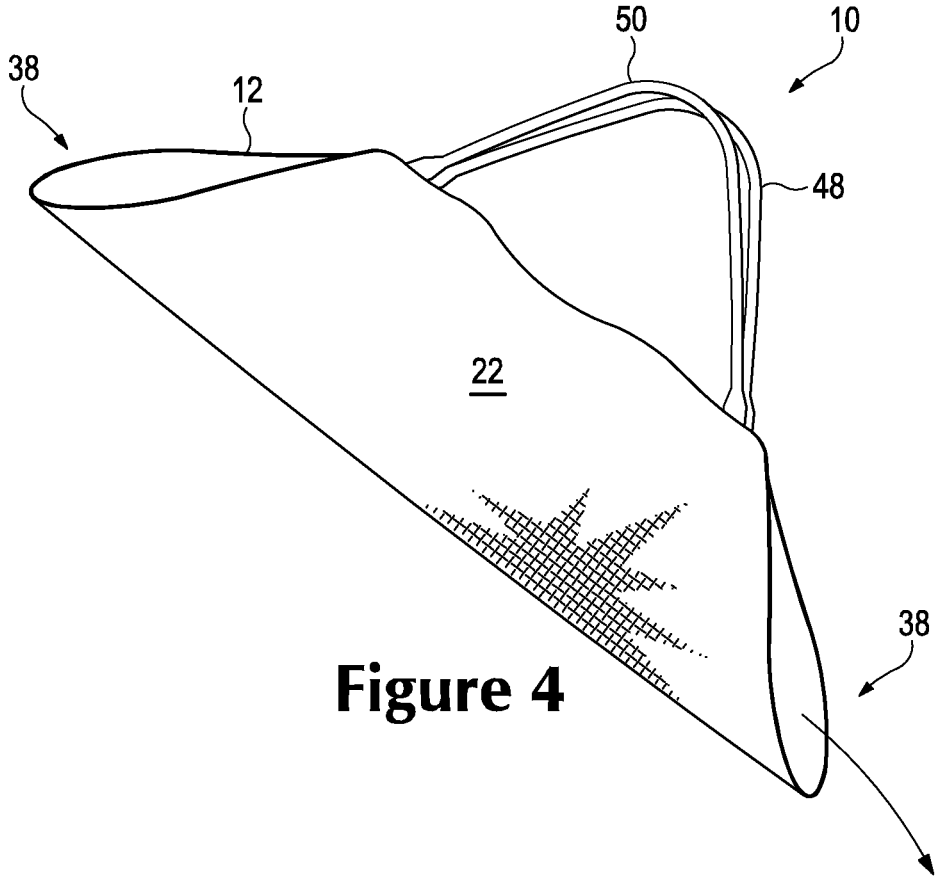

Figure 4

MATERIAL COLLECTION APPARATUS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application Ser. No. 61/415,742, filed Nov. 19, 2010 and entitled DEBRIS COLLECTING DEVICE, the disclosure of which is herein incorporated by reference.

BACKGROUND

The present disclosure relates to an apparatus for the collection and/or transportation of material, for example, trash, lawn debris, such as leaves, grass cuttings, weeds, or any other objects that may be collected, for example objects that may be collected by sweeping. Examples of material collection apparatuses are disclosed in U.S. Pat. Nos. 4,580,372; D611,670; 6,267,504; 5,943,831, 5,722,220, 7,552,956; 7,367,600; 7,093,867; 6,758,596; 7,520,546; 4,434,827; 4,561,480, 4,693,504; 5,147,102; 7,367,600, 7,594,754; 4,938,607; Re. 34,849; 7,552,956; 4,561,480 and Publication Nos. 2004/0212201 and US2007/0177826. The complete disclosures of the above patents and/or patent applications are herein incorporated by reference for all purposes.

SUMMARY

In one example, an apparatus for collecting material is provided. The apparatus may include a flexible support structure having a first surface and a second surface, the first surface including a material collection area. The apparatus may further include a closure system including a first fastener member disposed on the first surface and a second fastener member disposed on the second surface. At least a portion of the closure system may be spaced from a peripheral edge of the support structure and/or may be configured to releaseably join the first surface and the second surface together. The support structure may include an open configuration and a rolled configuration, wherein in the rolled configuration the closure system may releaseably join the first surface and the second surface together and/or funnel shapes may be formed on either side of the material collection area.

A further example of an apparatus for collecting material may include a flexible support structure having a material collection area and a carrying system including a first graspable member and a second graspable member. The first graspable member may be disposed on the support structure diagonally opposite the second graspable member such that the material collection area is between the first and second graspable members. The support structure may include an open configuration and a carrying configuration. In the carrying configuration the support structure is supported by the carrying system such that the collected material is substantially concentrated in the material collection area.

A further example of an apparatus for collecting material may include a flexible support structure including a material collection area and a closure system including a first fastener member disposed on the support structure and a second fastener member disposed on the support structure substantially diagonally opposing the first fastener member. The first and second fastener members may be configured to releaseably engage each other. The apparatus may further include a carrying system including a first graspable member disposed on the support structure substantially adjacent the first fastener member and a second graspable member disposed on the support structure substantially adjacent the second fastener member.

Advantages of the present disclosure will be more readily understood after considering the drawings and the Detailed Description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top view of an apparatus for collecting material in accordance with the present disclosure, showing a first surface of a support structure and including an enlarged view of an area of the support structure.

FIG. **2** is a top view of the apparatus for collecting material of FIG. **1**, showing a second surface of the support structure

FIG. **3** is a side perspective view of the apparatus for collecting material of FIG. **1**, showing the support structure in a rolled configuration.

FIG. **4** is a side perspective view of the apparatus for collecting material of FIG. **1**, showing the support structure in a carrying configuration.

DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS

FIGS. **1-4** show various views of an apparatus for collecting material in accordance with the present disclosure, indicated generally at **10**. As shown in FIG. **1**, apparatus **10** for collecting material in accordance with the present disclosure may function in a substantially open configuration as a collection platform for debris. Apparatus **10** may be arranged into a rolled configuration (FIG. **3**) and/or a carrying configuration (FIG. **4**) to secure, compact and/or concentrate the debris. Apparatus **10** may further be arranged into the rolled configuration and/or the carrying configuration for lifting and dispensing the debris into a collection container.

Apparatus **10** may include a support structure **12**. All or a portion of support structure **12** may include a flexible material. Additionally and/or alternatively, all or a portion of support structure **12** may be substantially water and/or mold resistant. For example, some or all of the strands of a woven material may be coated with a water resistant and/or mold resistant substance.

Additionally and/or alternatively, all or a portion of support structure **12** may include a woven material, for example a woven pre-consumer recycled material. The weave of the material may be open, also referred to as permeable, such that fluid (water and/or air) may pass through support structure **12**. An enlarged sectional view of support structure **12** is shown in FIG. **1**. The woven strands may allow for breathability, which may prevent mold/rot of material during storage. Non-breathable sheets, such as tarps, may mold or rot if not properly dried before long term storage. The woven strands may further allow water to drain through support structure **12**, preventing a puddle of water from accumulating on support structure **12**, like what would happen with a tarp.

Support structure **12** may include a quadrangle shape, for example a square or a rectangle. Support structure **12** may include a peripheral edge **14**. Support structure **12** may further include, for example, a first corner **16** and a second corner **18** diagonally opposing first corner **16**. For example, support structure **12** may include a square shape having a size of four (4) feet by four (4) feet, however other embodiments may have different shapes and/or sizes. Support

structure **12** may additionally and/or alternatively include all other shapes known to those skilled in the art, such as circular, elliptical, polyangular, etc.

Support structure **12** may include a first surface **20**, also referred to as a debris side (FIG. **1**), and a second surface **22**, also referred to as a carrying side (FIG. **2**). First surface **20** may include a material collection area **24**. Material collection area **24** may include all or a portion of first surface **20**. Material collection area **24** may be substantially centered within the configuration of first surface **20**.

Additionally and/or alternatively, apparatus **10** may include a closure system including a first fastener member **26** and a second fastener member **28**. First and second fastener members **26**, **28** may be configured to releaseably engage each other. First fastener member **26** may be disposed on first surface **20** and second fastener member **28** may be disposed on second surface **22**. The first and second fastener members may be configured to releaseably join first surface **20** and second surface **22** together (FIG. **3**).

First and second fastener members **26**, **28** may be disposed on opposite sides, edges and/or corners of support structure **12**. Material collection area **24** may be substantially centered between first and second fastener members **26**, **28**. As shown in FIGS. **1** and **2**, first fastener member **26** may be disposed on support structure **12** and second fastener member **28** disposed on support structure **12** substantially diagonally opposing first fastener member **26**. In other words, the first and second fastener members may be substantially diagonally disposed across support structure **12**. For example, first fastener member **26** may be disposed adjacent first corner **16** and second fastener member **28** may be disposed adjacent a second corner **18**.

As shown in FIGS. **1** and **2**, at least a portion of the closure system, for example a distal end **30** of one or both of first and second fastener members **26**, **28**, may be spaced from peripheral edge **14** of support structure **12**. In some embodiments, the closure system may span between the portion spaced from peripheral edge **14** to substantially adjacent peripheral edge **14**. For example, one or both of first and second fastener members may span extend between distal end **30** and an adjacent end **32**, substantially adjacent to peripheral edge **14**. The closure system may include a hook and loop fastener system, such as Velcro®, snaps, hook and eye and/or any other closure means known to those skilled in the art.

In some embodiments, second fastener member **28** may be spaced from the tip of second corner **18** on second surface **22** of support structure **12**, for example by two inches. Second fastener member **86** may include a strip of Velcro® material approximately 7.5 inches long and 1 inch wide. First fastener member **26** may be spaced from the tip of first corner **16** on first surface **20** of support structure **12**, for example by one inch. First fastener member **26** may include a strip of Velcro® material approximately 7 inches long and 1 inch wide.

First fastener member **26** and/or first corner **16** may include a tab member **34** configured to aid in removing attachment of first fastener member **26** from second fastener member **28** and/or first corner from second corner. Tab member **34** may be attached at adjacent end **32** of first fastener member **26** and/or first surface **20** of support structure **12** and may include a free end **36**. Free end **36** may extend beyond first corner **16**. Tab member **34** may be approximately 1.5 inches long and may include a colored vinyl material.

When support structure **12** is disposed with first surface **20** facing upwards (FIG. **1**), first corner **16** of support structure **12** may be rolled towards second corner **18** of support structure **12** such that first fastener member **26** engages second fastener member **28** and/or support structure **12** forms a tunnel-like containment space having a funnel **38** at either end (FIG. **3**).

As shown in FIG. **3**, in the rolled configuration, the closure system may releaseably join first surface **20** and second surface **22** together and/or funnel shapes **38** may be formed on either side of material collection area **24**. Funnels **38** may assist in the dispensing of any collected debris from apparatus **10**, for example, by assisting in concentrating the material being dispensed such that it is more likely that the dispensed material will fall into the intended area. Funnels **38** may include a bottom portion **40** of periphery **14** extending further than the side portions **42** of the periphery **14**. In embodiments of support structure **12** including a quadrangle shape, bottom portion **40** may include a third corner **44** and/or a second corner **46**.

Additionally and/or alternatively, apparatus **10** may include a carrying system including a first graspable member **48** and a second graspable member **50**. First and second graspable members **48**, **50** may be disposed on opposite sides, edges and/or corners of support structure **12**. Material collection area **25** may be substantially centered between first and second graspable members **48**, **50**. Additionally and/or alternatively, one or both either side of the first and second graspable members **48**, **50** may be disposed substantially adjacent peripheral edge **14** of support structure **12**.

Additionally and/or alternatively, first and second graspable members **48**, **50** may each span a portion of second surface **22**. Additionally and/or alternatively, first graspable member **48** may span a portion of first corner **16** and second graspable member **50** may span portion of the diagonally opposed second corner **18**. First graspable member **48** may be disposed on support structure **12** substantially adjacent first fastener member **26**. Second graspable member **50** may be disposed on support structure **12** substantially adjacent second fastener member **28**. First graspable member **48** may span a portion of second surface **22** substantially adjacent to first fastener member **26** and second graspable member **50** may span a portion of second surface **22** substantially adjacent to second fastener member **28**.

One or both of first and second graspable members **48**, **50** may include a strap **52**. The length of strap **52** may be greater than the distance of support structure **12** spanned by first or second graspable member **48**, **50**. A first end **54** and/or a second end **56** of strap **52** may be attached to support structure **12** substantially adjacent periphery **14** such that first graspable member **48** spans a portion of first corner **16** and second graspable member **50** spans a portion of second corner **18**. Strap **52** may include a resilient material and/or may include padding.

As shown in FIG. **4**, apparatus for collecting material **10** may further include the carrying configuration position in which support structure **12** may be supported by the carrying system. Additionally and/or alternatively, in the carrying configuration, the collected material may be substantially concentrated in material collection area **24**. Additionally and/or alternatively, in the carrying configuration, funnels **38** may be formed on either side of material collection area **24**.

In operation, support structure **12** may be unrolled and/or laid in the open configuration. Preferably, support structure **12** is laid flat on a support surface, such as a lawn containing an abundance of leaves, however, support structure **12** need not be perfectly horizontal, but should be at least partially oriented such that gravity will not force materials placed upon support structure **12** to move from support structure **12**.

Second surface **22** may be facing the support surface and/or first surface **20** may be facing away from the support surface (FIG. **1**).

A user may rake leaves or other debris onto support structure **12** until the material collection are is full and/or a desired fill level is obtained. First corner **16** may be pulled across support structure **12** to the diametrically opposed second corner and/or two corners may be brought together such that first surface **20** of first corner **16** overlaps onto second surface **22** of second corner **18** and/or complementary closure means **26**, **28** may be attached to one another (FIG. **3**). First and second corners **16**, **18** may then be overlapped and/or complementary closure means **26**, **28** may be engaged such that apparatus **10** may securely enclose the leaves, or other debris within support structure **12**.

A user may then grasp one or both first and second graspable members **48**, **50**, bring first and second graspable members **48**, **50** together and/or lift apparatus **10** (FIG. **6**). To carry the collected debris, the user may rest first and second graspable members **48**, **50** on the user's shoulders. To dispose of the collect debris, the user may tilt apparatus **10** such that one of the two funnels **38** is disposed within a refuse container (FIG. **5**). A user may then shake out the debris or un-do complementary closure means to cause the collected debris to fall into a refuse container (not shown).

The foregoing description discusses the removal of leaves from a lawn, however, apparatus **10** for collecting material may be for bagging anything suitable for a bag. For example, the disclosed device could be used to dispose of weeds from a garden, or cuttings from an individual's lawn. Additionally, it could be used to dispose of any trash which is more easily swept to a specific location than being picked up, piece-by-piece and placed within a bag as it is picked up.

Some embodiments of the all-in-one apparatus may include a woven sheet, a fastener system, such as Velcro™ fasteners, for securing a set of diagonal corners of the sheet, handles or shoulder straps coupled to diagonal corners of the tarp, and indicator tabs for indicating which corners of the sheet to fasten together.

The various embodiments of the illustrated apparatus for collecting material, and the various components, if present, may be fabricated from any suitable material, or combination of materials, such as plastic, foamed plastic, wood, cardboard, pressed paper, metal, or the like. A suitable material may be selected to provide a desirable combination of weight, strength, durability, flexibility, cost, manufacturability, appearance, safety, and the like.

The exemplary embodiments and methods illustrated and disclosed herein are believed to encompass multiple distinct inventions with independent utility. While each has been disclosed in an exemplary form, the specific embodiments thereof as disclosed and illustrated herein are not to be considered in a limiting sense, as numerous variations of the concepts and components are possible. The subject matter of the inventions includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions and/or properties disclosed herein.

Where any description recites "a" or "a first" element or the equivalent thereof, such description should be understood to include incorporation of one or more such elements, neither requiring nor excluding two or more such elements.

I claim:

1. An apparatus for collecting debris material capable of having mold grow in it, the apparatus comprising;

a flexible support structure having a top surface and a bottom surface, the support structure including top and bottom surfaces being formed of a woven material coated substantially with a mold-resistant substance and a water-resistant substance, the woven material being constructed with a weave that is open sufficiently to allow water to pass through, and the top surface including a material collection area;

a carrying system including a first graspable member and a second graspable member, the first graspable member disposed on the support structure substantially diagonally opposite the second graspable member such that the material collection area is between the first and second graspable members;

the support structure including an open configuration and a carrying configuration, wherein in the carrying configuration the support structure is supported by the carrying system such that the collected material is substantially concentrated in the material collection area;

wherein the first graspable member spans a portion of a first corner of the support structure and the second graspable member spans a portion of a diagonally opposed second corner of the support structure;

a closure system including a first fastener member disposed adjacent the first corner and a second fastener member disposed adjacent the second corner;

wherein the first fastener member is disposed on the top surface of the support structure and the second fastener member is disposed on the bottom surface of the support structure, wherein the closure system releaseably joins the top surface and the bottom surface together such that funnel shapes are formed on either side of the material collection area to allow for dispensing of collected debris material;

wherein the permeable support structure is constructed to be effective to minimize the possibility of mold growing within it as a result of contact with the collected debris material; and

wherein the mold-resistant and water-resistant qualities of top and bottom surfaces of the support structure are effective to minimize the possibility of mold growing within the support structure as a result of contact with the collected debris material.

2. The apparatus of claim **1**, wherein the woven material is made from pre-cut recycled materials that have mold-resistant and water-resistant qualities.

* * * * *